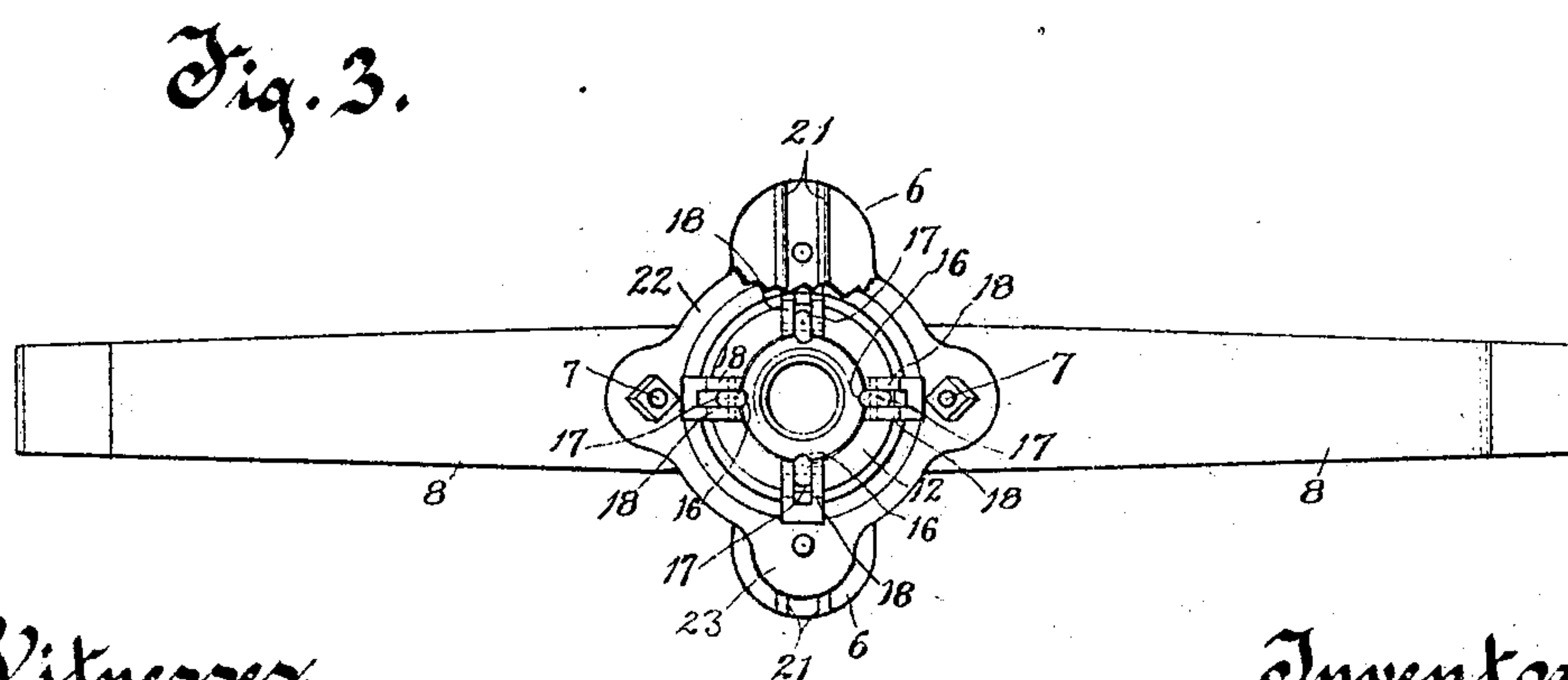
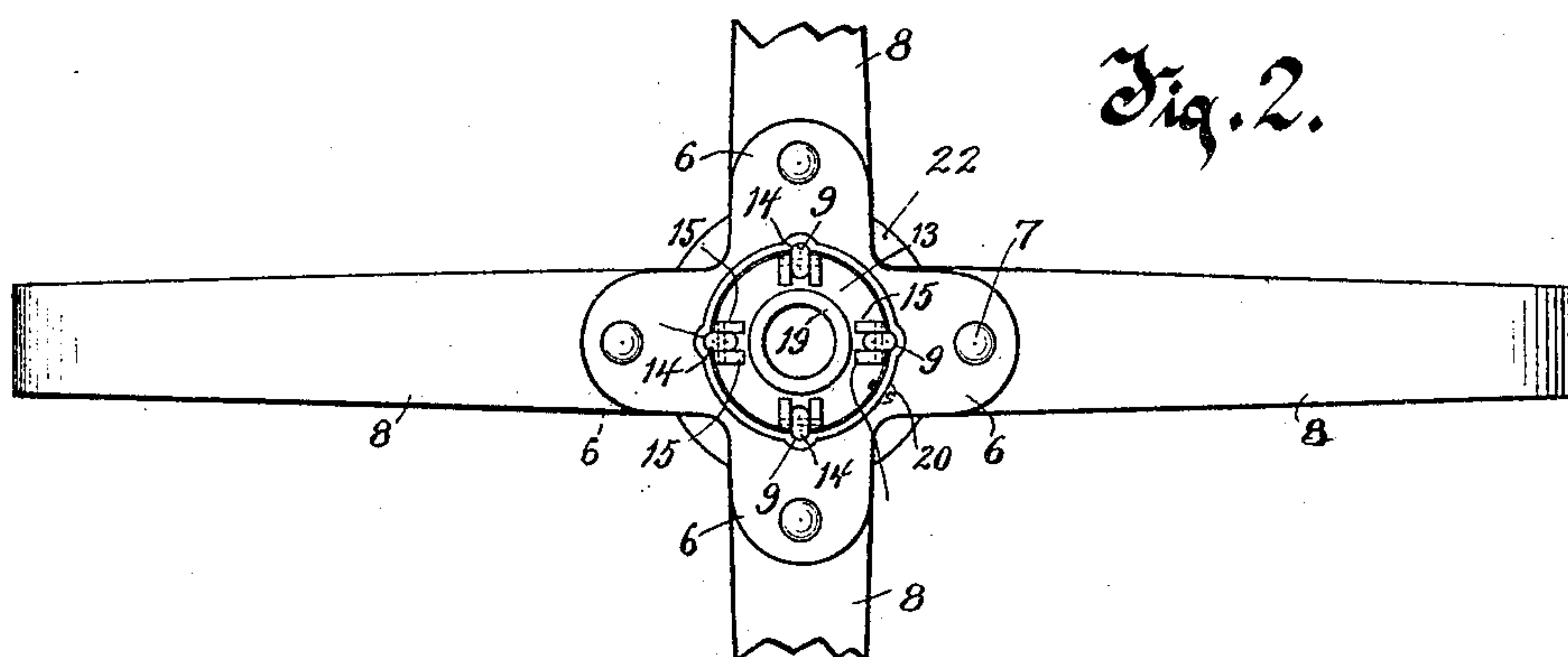
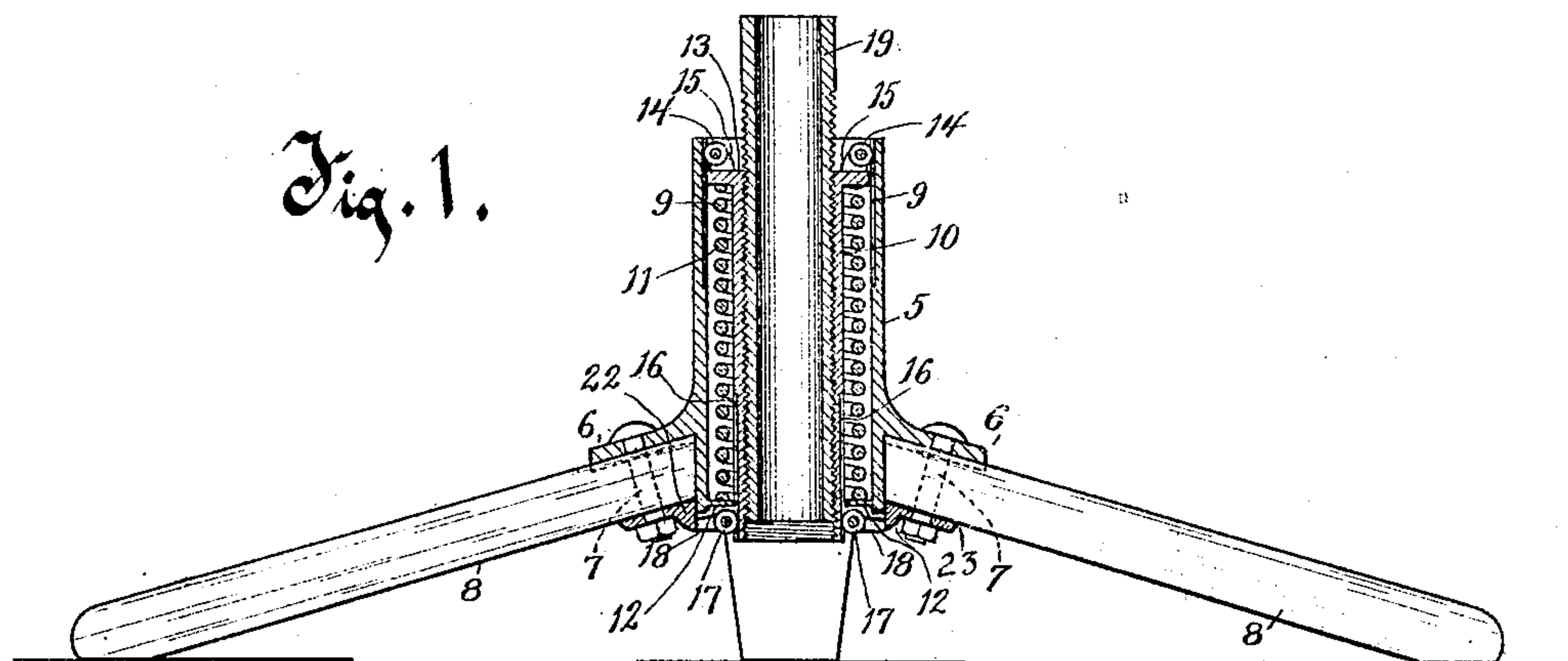


No. 764,695.

PATENTED JULY 12, 1904.

A. WHITE.  
SPRING SEAT CHAIR IRON.  
APPLICATION FILED AUG. 24, 1903.

NO MODEL.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ARTHUR WHITE, OF SHEBOYGAN FALLS, WISCONSIN.

## SPRING-SEAT CHAIR-IRON.

SPECIFICATION forming part of Letters Patent No. 764,695, dated July 12, 1904.

Application filed August 24, 1903. Serial No. 170,530. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR WHITE, residing at Sheboygan Falls, in the county of Sheboygan and State of Wisconsin, have invented a new and useful Improvement in Spring-Seat Chair-Irons, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in spring-seat chair-irons.

The primary object of the invention is to provide a construction of chair-iron wherein a spring-cushion is provided which is so arranged that when a person seats himself or is seated in the chair to which the iron is applied a yielding or springy motion is produced which greatly promotes the comfort of the occupant.

With the above primary and other incidental objects in view the invention consists of the devices and parts or their equivalents, as hereinafter set forth.

In the accompanying drawings, Figure 1 is a vertical sectional view of a chair-iron constructed in accordance with my invention. Fig. 2 is a top plan of the invention, and Fig. 3 is an inverted plan view.

Referring to the drawings, the numeral 5 indicates the tubular chair-iron hub. Near the lower end this hub 5 is provided with radially-extending and preferably downwardly-inclined flat arms or flanges 6, adapted to fit onto the inner ends of chair-supporting legs 8. These arms are provided with one or more radially-extending ribs 21, which fit into grooves therefor in the upper surface of the legs 8 and assist in preventing the legs from turning or skewing around laterally. The tubular hub 5 extends below the arms 6 a distance slightly greater than the thickness of the legs 8, and a ring 22, fitting on the lower extremity of the hub, is provided with radially-projecting flanges 23, equal in number and complementary to the arms 6, which flanges are adapted to fit against the under surfaces of the legs 8, and bolts 7 are inserted through the arms, the legs, and the flanges and secure the legs to the hub. These legs instead of

usually, as is customary, have their greatest width disposed horizontally, as will clearly appear by a comparison between Fig. 1 and Figs. 2 and 3. This necessarily decreases the height of the legs, and consequently reduces considerably the liability of the feet of the occupant of the chair coming in contact with said legs. This danger is still further avoided by reason of the leg-securing devices being only at the lower end of the hub instead of extending vertically of said hub, as is ordinarily the case, and when said securing devices extend downwardly on an inclination outwardly the danger referred to is still further avoided, inasmuch as in such case straight legs, such as shown in the drawings, are permitted to be employed instead of legs having upward curvatures, such as are employed in connection with the most common form of chair-irons.

The interior of the hub is provided with a series of groove-runways 9, said runways extending from the upper end of the hub downwardly a necessary distance.

Arranged loosely within the hub is a spring-cushioned sleeve member 10, and within the space between this member 10 and the interior of the hub is a coiled spring 11, said spring surrounding the member 10 and having its lower end seated on a bottom flange 12 of the hub and its upper end bearing against the under side of a top flange 13 of the sleeve member 10. This flange 13 carries a series of projections, preferably in the form of anti-friction-rollers 14, which rollers correspond in number to and travel in the groove-runways 9 of the hub. These rollers are conveniently mounted on ears 15 15, extending upwardly from the flange 13, said ears forming bearings for the journals of the rollers. The member 10 is also provided with a series of vertical groove-runways 16, extending from the lower end thereof upwardly for a desired distance. These runways receive therein projections extending from the bottom ring 22, said projections likewise being preferably in the form of anti-friction-rollers 17, which are mounted between ears 18 18, said ears forming bearings for the journals of the rollers.



The sleeve member 10 is secured to an upwardly-extending spindle 19, which spindle carries the chair-seat or spider thereon. This spindle may be integral with the sleeve 10, or in case the chair-iron is employed in connection with so-called "revolving" chairs, said spindle may be screw-threaded and secured to the sleeve detachably, as shown in the drawings. The exterior threads of the spindle 19 engage interior threads in the member 10. Where this screw-threaded spindle is employed, it is preferably tubular in form in order to secure lightness. It is obvious that the upper end of said screw-threaded spindle may be connected directly with the chair-seat or with a spider secured to the under side of the chair-seat, or the chair-seat or the spider on the under side thereof may be provided with a depending spindle adapted to be fitted revolvably in the bore of the spindle 19.

The member 10 is prevented from being pulled upwardly out of the hub by means of a screw 20, which passes through the upper end of the hub and projects over the flange 13 of said member 10.

In use when a person seats himself on the chair his weight will cause a downward movement of the member 10, thereby compressing the spring 11, and during the time the person occupies the seat the spring is constantly under tension, and consequently provides a cushion which affords an easy and yielding seat. When the person leaves the seat, the recoil of the spring will return the member 10 to its normal position. The member 10 is guided in its vertical movement by the antifriction-rollers 14 and 17, traveling in the grooves of the hub and member 10, respectively. If the upward extension from the member 10 is formed of the threaded spindle 19, as shown in the accompanying drawings, so as to adapt the chair-iron to a revolving chair, and it is desired to adjust the vertical height of said chair, the spindle 19 may be turned on its threads, so as to raise or lower the same, the member 10 being held stationary by means of the engagement of the antifriction-rollers with the walls of the grooves.

What I claim as my invention is—

1. In a chair-iron, the combination of a tubular hub having its upper and lower ends open, the lower end having an inwardly-projecting flange and said hub in its upper portion being provided with vertical grooves in its interior surface, a vertically-movable sleeve member within the bore of the hub and extending substantially the length of the hub, and of such less diameter than the diameter of said hub as to form a space between the two and provided on its lower outer surface longitudinally with grooves, and at its upper end with an outwardly-projecting flange, said movable member being adapted to act as a support for a chair-seat, or the like, a spring surrounding the movable member and arranged in the space between said movable member and the hub, the lower end of the spring resting against the flange on the lower end of the hub, and the upper end of said spring bearing against the under side of the flange at the upper end of the movable member, and rollers carried respectively by the flange at the upper end of the movable member and by a ring at and on the lower end of the hub, the rollers carried by the flange of the movable member traveling in grooves in the hub, and the rollers carried by the ring at the lower end of the hub traveling in grooves in the movable member.

2. In a chair-iron, the combination of a tubular hub having medially-disposed flat radial arms provided with longitudinal ribs in their lower surfaces, a ring fitting on the prolongation of the tubular hub below said arms and having radial flanges complementary to said arms, rollers on said ring and projecting inwardly therefrom, and a non-revoluble sleeve member movable vertically in said tubular hub and guided by said rollers.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR WHITE.

Witnesses:

C. T. BENEDICT,  
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